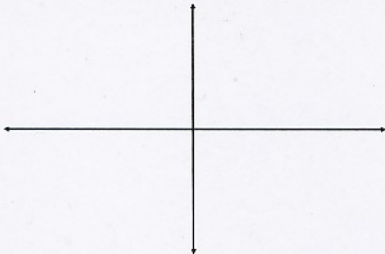


Establish  
that students  
need to this  
NEATLY!

Objective: Students will be able to understand the origins of the UNIT CIRCLE and how each trig function gets its values when given an angle in the unit circle.

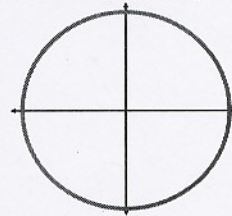
On your engineering paper, draw a coordinate plane that takes up approximately half the page.



Objective: Students will be able to understand the origins of the UNIT CIRCLE and how each trig function gets its values when given an angle in the unit circle.

Use a compass to draw a large circle with the center at the origin of the coordinate plane.

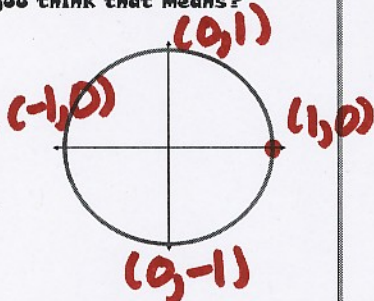
Neatly!



Objective: Students will be able to understand the origins of the UNIT CIRCLE and how each trig function gets its values when given an angle in the unit circle.

This is a UNIT circle.  
What do you think that means?

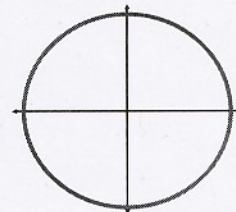
Label all four  
"corners" with  
their  
corresponding  
ordered pairs.



Objective: Students will be able to understand the origins of the UNIT CIRCLE and how each trig function gets its values when given an angle in the unit circle.

By the time we are finished, this  
circle will have 16 ordered pairs  
labeled on it!

In order to do so, we  
need to review some  
stuff about special  
right triangles!



Unit  $\Rightarrow$  1  
(Example... unit  
price)

Click the  
black  $\Delta$ 's  
to "reveal"

These are 45-45-90 right triangles. Click the triangles!

Do you remember the relationship between the sides and the hypotenuse?

3, 3,  $3\sqrt{2}$

5, 5,  $5\sqrt{2}$

1, 1,  $\sqrt{2}$

x, x,  $x\sqrt{2}$

Objective: Students will be able to understand the origins of the UNIT CIRCLE and how each trig function gets its values when given an angle in the unit circle.

This is important for later! Circle it in your notes!

Reinforce a circle continues...  
0°, 360°, 720°...  
and can go backward

These are 30-60-90 right triangles. Use the patterns to find a relationship like you did in the last problem.

5,  $5\sqrt{3}$ , 10

17,  $17\sqrt{3}$ , 34

x,  $x\sqrt{3}$ , 2x

This is important for later! Circle it in your notes!

Let's go back to our UNIT CIRCLE. How many degrees are in a full circle?

Label the degrees and the quadrants.

Cut the quadrants in half.

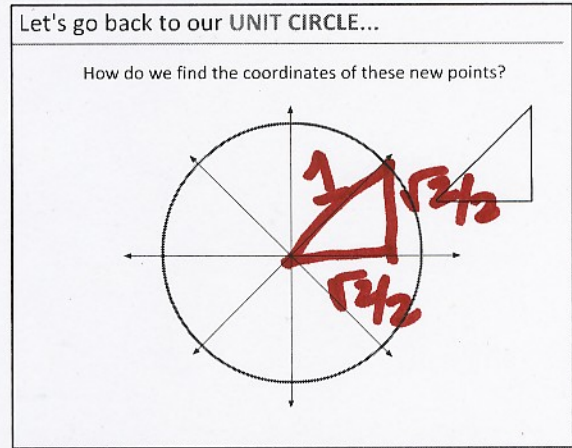
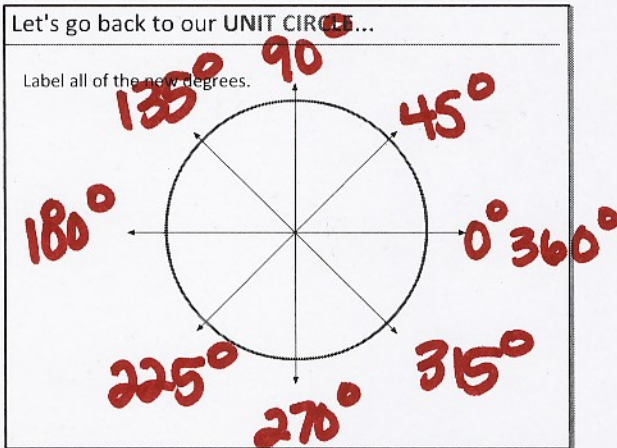
0°, 90°, 180°, 270°

I, II, III, IV

-180°, -90°, etc.!



\* Big 1 page.

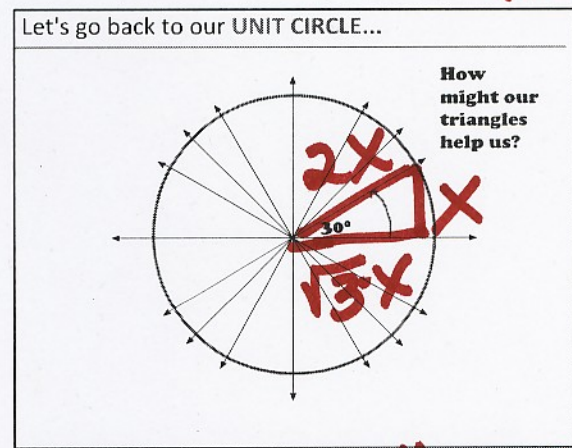
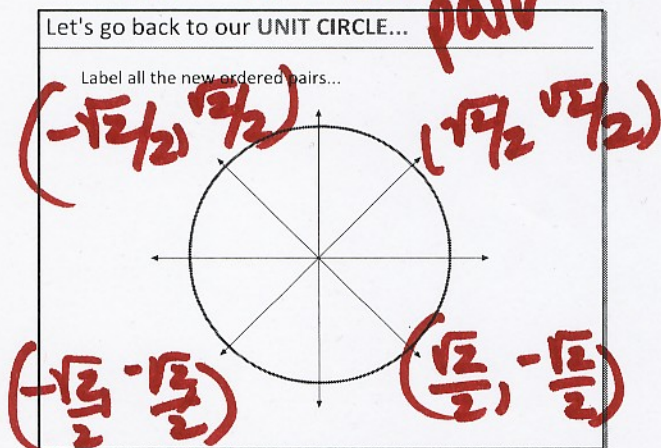


1) MOVE  $\Delta$  into  $45^\circ$  Spot

2) Pull Back

3) refer to relationship  $x\sqrt{2} = 1 \Rightarrow x = \frac{1}{\sqrt{2}}$   
 $x = \frac{\sqrt{2}}{2}$

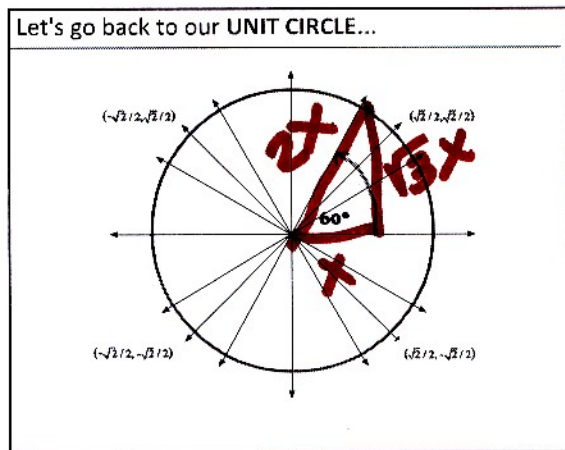
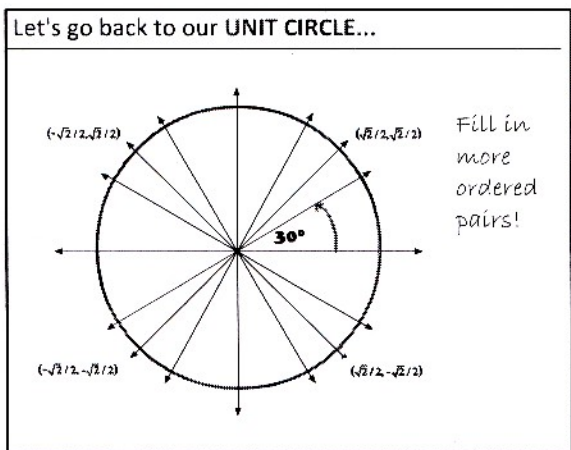
talk through  
 now this  
 $\downarrow$  becomes  
 an ordered pair



$2x = 1$  (unit circle)

$x = \frac{1}{2}$

Same  $\Delta$



$$2x=1 \therefore x=\frac{1}{2}$$

